



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0103; Project Identifier MCAI-2020-00604-E; Amendment 39-21659; AD 2021-15-12]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corp. Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Pratt & Whitney Canada Corp. (P&WC) PW210A and PW210S model turboshift engines. This AD was prompted by a report from the manufacturer that the Automated Damage Tracking System (ADTS) may under-count the number of cycles accrued by the impeller and the high-pressure compressor (HPC) rotor. This AD requires use of the manual low-cycle fatigue (LCF) counting method in place of the ADTS counting method to determine the number of cycles accrued by the impeller and HPC rotor. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Pratt & Whitney Canada Corp., 1000 Marie-Victorin, Longueuil, Quebec, J4G 1A1 Canada; phone: (800) 268-8000. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0103.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0103; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M 30, West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; fax: (781) 238-7199; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all P&WC PW210A and PW210S model turboshaft engines. The NPRM published in the *Federal Register* on February 26, 2021 (86 FR 11651). The NPRM was prompted by a report from the manufacturer that the ADTS may under-count the number of cycles accrued by the impeller and the HPC rotor. The impeller and HPC rotor are both life-limited components and exceeding their published life limits could result in the failure of these components. In the NPRM, the FAA proposed to require the use of the manual LCF counting method in place of the ADTS counting method to determine the number of cycles accrued by the impeller and HPC rotor. The FAA is issuing this AD to address the unsafe condition on these products.

Transport Canada Civil Aviation (Transport Canada), which is the aviation authority for Canada, has issued Transport Canada AD CF-2020-13, dated April 28, 2020 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

The engine manufacturer has discovered that the Automated Damage Tracking System (ADTS) may under-count the number of

cycles accrued by the impeller and the High Pressure (HP) compressor rotor. The impeller and HP compressor rotor are both life limited components and exceeding their published life limits could result in the failure of these components.

Failure of the impeller or HP compressor rotor could result in the uncontained release of the impeller or the HP compressor rotor, and subsequently could result in damage to the engine, damage to the helicopter, and loss of control of the helicopter.

This [Transport Canada] AD mandates the use of the Manual Low Cycle Fatigue (LCF) Counting method to ensure that the impeller and HP compressor rotor do not exceed their published life limits.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0103.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from one commenter. The individual commenter supported the NPRM without change.

Clarification that Reporting is not Required

The FAA added paragraph (i) to this AD to clarify that the reporting specified in P&WC Alert Service Bulletin (ASB) No. PW210-72-A57142, Revision No. 1, dated March 26, 2020, and P&WC ASB No. PW210-72-A57143, Revision No. 1, dated March 26, 2020, is not required by this AD.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM.

Related Service Information under 1 CFR Part 51

The FAA reviewed Pratt & Whitney Canada Corp. Alert Service Bulletin (ASB) No. PW210-72-A57142, Revision No. 1, dated March 26, 2020 (ASB No. PW210-72-A57142); and Pratt & Whitney Canada Corp. ASB No. PW210-72-A57143, Revision No. 1, dated March 26, 2020 (ASB No. PW210-72-A57143). ASB No. PW210-72-A57142 specifies procedures for calculating the correct, current LCF cycle count for the impeller and HPC rotor on PW210A model turboshaft engines. ASB No. PW210-72-A57143 specifies procedures for calculating the correct, current LCF cycle count for the impeller and HPC rotor installed on PW210S model turboshaft engines. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed Pratt & Whitney Canada Corp. Task 00-00-00-860-801 and Task 00-00-00-860-803 of Pratt & Whitney Canada Corp. Engine Maintenance Manual (EMM), Manual Part No. 30L2392, Airworthiness Limitations Section (ALS), both at Revision 13, dated September 28, 2020.

Pratt & Whitney Canada Corp. Task 00-00-00-860-801 of Pratt & Whitney Canada Corp. EMM, Manual Part No. 30L2392, identifies the LCF life limits for the impeller and HPC rotor. Pratt & Whitney Canada Corp. Task 00-00-00-860-803 of Pratt & Whitney Canada Corp. EMM, Manual Part No. 30L2392, describes procedures for manually calculating the correct, current LCF cycle count for the impeller and HPC rotor and provides the formula for manually calculating the accumulated total cycles for the impeller and HPC rotor.

Interim Action

The FAA considers this AD to be an interim action. If final action is later identified, the FAA might consider additional rulemaking.

Costs of Compliance

The FAA estimates that this AD affects 66 engines installed on helicopters of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

| Action | Labor Cost | Parts Cost | Cost per product | Cost on U.S. operators |
|-------------------------------|------------------------------------|-------------------|-------------------------|-------------------------------|
| Manually calculate LCF cycles | 1 work-hour x \$85 per hour = \$85 | \$0 | \$85 | \$5,610 |

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-15-12 Pratt & Whitney Canada Corp.: Amendment 39-21659; Docket No. FAA-2020-0103; Project Identifier MCAI-2020-00604-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney Canada Corp. (P&WC) PW210A and PW210S model turboshaft engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by a report from the manufacturer that the Automated Damage Tracking System (ADTS) may under-count the number of cycles accrued by the impeller and the high-pressure compressor (HPC) rotor, which could result in the failure of these components. The FAA is issuing this AD to prevent failure of the impeller and the HPC rotor. The unsafe condition, if not addressed, could result in the uncontained release of the impeller or the HPC rotor, damage to the engine, damage to the helicopter, and loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Before exceeding 7,000 starts or 14,000 flight cycles since new on the affected engine, or prior to removal of the engine from the aircraft for the purpose of sending the engine to a repair or overhaul facility, whichever occurs first after the effective date of this AD:

(1) Use the manual low-cycle fatigue (LCF) counting method to determine the accumulated LCF cycles for the impeller and the HPC rotor using paragraph 3.A., Accomplishment Instructions, of P&WC Alert Service Bulletin (ASB) No. PW210-72-A57142, Revision No. 1, dated March 26, 2020, or P&WC ASB No. PW210-72-A57143, Revision No. 1, dated March 26, 2020, as applicable for the engine model.

(2) After performing the actions required by paragraph (g)(1) of this AD, use the manual LCF counting method specified in paragraph (g)(1) of this AD to count subsequent LCF cycles on the impeller and HPC rotor. Do not use the ADTS to count subsequent LCF cycles on the impeller or the HPC rotor.

(h) Definition

For the purpose of this AD, a “start” is an engine start followed by one or more flights.

(i) No Reporting Requirement

The reporting requirement specified in the Accomplishment Instructions, paragraph 3.A.4., of P&WC ASB No. PW210-72-A57142, Revision No. 1, dated March 26, 2020, and paragraph 3.A.4., of P&WC ASB No. PW210-72-A57143, Revision No. 1, dated March 26, 2020, is not required by this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in Related Information.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; fax: (781) 238-7199; email: barbara.caufield@faa.gov.

(2) Refer to Transport Canada Civil Aviation (TCCA) AD CF-2020-13, dated April 28, 2020, for more information. You may examine the TCCA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0103.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Pratt & Whitney Canada Corp. (P&WC) Alert Service Bulletin (ASB) No. PW210-72-A57142, Revision No. 1, dated March 26, 2020.

(ii) P&WC ASB No. PW210-72-A57143, Revision No. 1, dated March 26, 2020.

(3) For P&WC service information identified in this AD, contact Pratt & Whitney Canada Corp., 1000 Marie-Victorin, Longueuil, Quebec, J4G 1A1 Canada; phone: (800) 268-8000.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the

availability of this material at NARA, email: fedreg.legal@nara.gov, or go to:
<https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on July 15, 2021.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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